The effect of applying the theory of constraints in maximizing corporate profits in industrial companies application on Saudi private sector in accordance with vision 2030

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Abstract: The objectives of the study were the effect of applying the concept of the theory of constrain in maximizing the profits of Saudi industrial companies in accordance with the vision of 2030, and the study is based on the descriptive analytical approach. To obtain the data, the researchers’ used The preliminary data for this study were obtained through a questionnaire, and the Secondary data related to this study have been obtained by reference to books The validity of the hypotheses proved where it was reached that the application of the theory of constrain helps Saudi industrial companies in maximizing their profits, improving or increasing the level of improvement by applying the theory of constrain leads to maximizing the return of profits. The impact of the internal and external constrain of Saudi industrial companies in maximizing profits, Saudi Arabia’s strategy in accordance with Vision 2030 supports industrial companies to build a competitive and sustainable system that promises to benefit from the national economy and Saudi citizens.

Keywords: Theory of Constraints; Maximizing Corporate Profits; Industrial Companies.

1. Introduction

Increased intensity of competition need edited the need to develop traditional cost systems and planning profitability and production in order to keep pace with modern variables and focus on the study and analysis of different constraints and overcome them, which leads to raising the efficiency and effectiveness of the operational processes and then maximizing the overall profits of companies, and the theory of constraints is an administrative input based on a set of concepts and foundations. To help the administration identify the difficulties they face and is in the process of pursuing its goals and how to overcome them by identifying the necessary changes and how to happen efficiently and effectively. The theory of constraints is the process of achieving continuous improvement. Where vision 2030 works to revive the financial balance program through the growth of the private sector, which industrial companies are one of its important components through raising the efficiency of the industrial sector and relying on technical-based industries instead of employees.

2. The Problem of Study

By extrapolating a number of studies in the field of study that raised many problems related to the variables of the study, including study: Elsaid. Mohammed Jalal (2000) theory of constraints and their use in managerial accounting, the research deals with the uses of the theory of constraints in managerial accounting, and how to use the tools of restrictions. The results of the study are the most important: The restriction theory tool deals with achievement accounting and explains how it is used in measurement and show the disadvantages of inventory visiting methods of continuous improvement and value chains. Study Fouda(2003): The study aimed to clarify the
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Role of the theory of constraints and the introduction of the product life cycle in dealing with constraints and choke points in order to maximize the profits of industrial companies, the study reached to build a proposed framework between the theory of constraints and the introduction of the cost of the product life cycle through the concept of the value chain. The problem was to clarify the importance of the strategy of continuous improvement of the management of the operations of economic units and the application of the theory of constraints so that the constraints and constraints can be identified and used in the process of continuous improvement, the results were that there is the possibility of managing and determining productivity constraints in economic units, the effectiveness of continuous improvement helps to increase achievement and maximize profitability. Study Samirat, Bilal Yousef, Al-Ani, Guard Karim, (2011): The study aimed to apply the production system on time in conjunction with the application of the theory of constraints on reducing costs and improving financial performance in pharmaceutical companies. The study Sayyida, Al-Tiniya, (2012) the use of financial and cost information in determining production constraints from the perspective of the theory of restrictions, the problem of the study was that industrial organizations face a set of productive, administrative and political constraints that prevent the achievement of their objectives, and the study concluded that the theory of constraints aims to achieve the effectiveness of the system in light of the efficiency of the restriction imposed. Study: Shabani, et al., (2013) the study addressed the impact of the integration of comprehensive quality management with the theory of constraint under corporate governance and the problem of the study was that the study was that the pursuit of the overall quality of activities and processes without taking into account laws aimed at protecting stakeholders and without taking into account internal and external constraints to achieve goals, and from the results of the study the theory of constraints is an administrative tool that supports programs of continuous improvement and works on identifying constraints through comprehensive quality management. Study: osama Abdel Moneim et al., (2015) The study addressed the impact of the theory of constraints reducing the cost of shameful production in Jordanian industrial companies aimed at identifying the extent to which the concepts of the theory of constraints can be used to reduce the cost of shameful production in Jordanian industrial companies. Study Al-Jubouri, (2015): The study addressed the integration of the theory of constraints and continuous improvement of Kaizon and its reflection on cost reduction and maximizing achievement, and the study reached the results of the application of the system of theory constraints supported by some other applications such as comprehensive quality and value chain. Study Fatlawi, Karim Aidan, Journal of Management and Economics, (2016): The research addressed the theory of constraints and their role in continuously improving the performance of the production system, and the results of the research were the diagnosis of critical points in the production system.

The departments of industrial companies face some internal or external constraints and bottlenecks that may affect the efficiency and effectiveness of the use of resources and their competitiveness and thus hinder them in achieving their objectives of maximizing their profits and can formulate the problem of research in the following questions:

**Main Question:** Is there an effect on applying the theory of constraints maximizing the profits of industrial companies? The following questions follow:

**Question 1:** Does applying the theory of constraints help manage constraints more efficiently and effectively than traditional methods?

**Question 2:** Does the application of the theory of constraints help reduce stocks, time for production processes and reduce production costs in Saudi industrial companies?

**Question 3:** Does the application of the theory of constraints help measure the success of Saudi industrial companies in achieving their goals?

3. The Importance of the study:

This research deals with one of the methods of administrative accounting, which is the method of the theory of restrictions, which contributes to the process of increasing the effectiveness of continuous improvement, which can be highlighted in:

1. It may help in maximizing the profits of industrial companies by using and applying the theory of restrictions.
2. It may help in identifying and manage production constraints and bottlenecks that hinder industrial companies.
3. It may help in increasing the effectiveness and implementation of continuous improvement programs and performance development.

4. The Objectives of the Study:

1. Identify the quality of the constraints imposed on the system and how to manage these constraints more efficiently and effectively, thus maximizing the return on the internal operations of Saudi industrial companies.
2. Showing the impact of continuous improvement programs and identifying the bottlenecks imposed on the system and maximizing profits.
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5. Research Methodology:

The descriptive analytical approach was based on the researchers’ data obtained for this study from the following sources:

**Primary Sources:** The preliminary data for this study were obtained through a questionnaire prepared and distributed to a group of cost accountants in the industrial companies that sampled this study and then collected and analyzed the data using the Social Science SPS Software to test the validity of the study hypothesis.

**Secondary Sources:** Secondary data related to this study have been obtained by reference to books, university letters, scientific research, reports and articles in newspapers and magazines in order to build the theoretical framework for the study and achieve its objectives.

6. Hypotheses of the Study:

The study tests the following hypotheses:

**Main Hypothesis:** Is there a statistically significant effect when applying the theory of constraints maximizing the profits of industrial companies? The following questions follow:

1. There is a statistically significant effect of the theory of constraints because it focuses on throughput flow rates, inventory reduction and operating costs reduction to measure the company's success in achieving its objectives.

2. There is no statistically significant effect of applying the theory of constraints reducing the time of the production process and reducing production costs in Saudi industrial companies.

3. There is a statistically significant effect when using continuous improvement programs and identifying the bottleneck points imposed on the system in maximizing profits.

7. The study limits:

The study covers the following limits: spatial limit, selected sample of Saudi industrial companies, time limit 2018.

**Organization of research:**

The research section to four axes where the first axis deals with the general framework of the study, the second axis theoretical framework, the third axis field study and the fourth axis results and recommendations.

8. Theoretical Framework

**Introduction:**

Theory Constraints as one of the tools or methods used recently has received a lot of attention from accounting and administrative thought in the recent period. It was also known as ‘a tool that views economic unity as a series of interlocking rings with each other and the performance of the chain as a whole is determined by the weakest link in it, Hussein, (2008). Another sees it as ‘an operational strategy that focuses on profitability through the need to efficiently and effectively use the resources that are restricted or controlled by the flow of production, Abu Shanaf, (2001), p. 215.

**The Emergence and Development of the Theory of Restrictions:**

The idea of the theory of constraints is that the one who determines the performance of the series of operations is the weakest process in it and therefore the limitation on the performance of this series and therefore the procedure used to increase the performance period will be the series of operations as follows: Hussein, (2000), 210): Identify the weakest process in the production process chain, not to load the series of processes with more production capacity than the weakest capacity in it because it is the constraint affecting the production capacity of the series of operations as a whole, focusing improvement efforts on strengthening the weakest process in the process chain, if the improvement efforts are successful the capacity will increase the weaker operation.

**The Evolution of the Scope of the Theory of Restrictions:**

synchronix, (2002) indicated that the theory of constraints focuses on outputs and is the basis of the process of continuous improvement, and includes four levels:

**Level 1:** It is the philosophy of improving performance.

**Level 2:** It is the list that includes the five steps to focus on, which translate the philosophy of theory into action and give the unit a strong motivation for the process of continuous improvement by identifying and managing the constraint.

**Level 3:** It is related to the thinking process (TP) which helps to identify and manage political constraints.
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Level 4: Which relates to the applications of the theory of restrictions, which is the accounting of achievement, and the analysis of the value chain.

Types of Constraints:

The theory of constraints is pioneeringly based on the fact that each company faces two types of restrictions, some consider it internal and external, while others consider it to be material and political constraints and depend on the rational governance of the company and the types of constraints can be classified as: Altaria, (2006). p. 19).

1. **Internal constraints**: which limit the company’s ability to meet the demand for its products and are divided into:
   - Energy resource constraints: This type of internal constraint on the production process of machinery, equipment, personnel and any other tangible resources.
   - Administrative policy constraints associated with good governance

2. **External constraints**: It is a set of parameters that make the company late to meet the needs of customers and divided into:
   - Initial resource constraints: This constraint is created in the case of scarcity.

Majercak * Majercakova, (2013) has classified the constraints into two types:

1. Physical restrictions: constraints on resources, personnel, equipment.
2. Non-material restrictions: resulting from the policies and rules followed.

**Vision 2030 for Industrial Companies in the Private Sector: Vision 2030, p. 82-94)**

The strategy of the national industry is aimed at building a sustainable, competitive, diverse and diversified industry based on the private sector, which is used to save the national economy and Saudi citizens. The strategy of the national industry will be important in achieving tangible impact and results for all national programmes to develop the actual industrial clusters in the labour sector.

9. Field Study

1. The research community: The community means ‘everyone who represents the origin is fully represented by all its layers, segments and characteristics and uniformly reflects the general framework of its existence, whether it is terrestrial, atmospheric or aquatic neighborhoods in a specific place and at a specific time, can also be studied relatively comprehensively or partially, unless the complex is small, its size can be controlled in order to reach a certain result’. Al-Ashari, (2016), p. 35, this current research community is made up of industrial companies in Saudi Arabia of a different nature.

2. Sample research: Since the method of comprehensive survey requires time, effort and cost, and in short, the researcher took an appropriate sample from Saudi industrial companies by distributing the resolution electronically to the research community, where (68) responses were received, which is considered a suitable sample size for the current research according to ‘Uma Sakaran, 2016, p 264’ that the sample size of 30 to 500 singles is suitable for most research studies, and to analyze the study sample data, it was deliberately The researcher to encode it with the statistical package of social sciences known as (SPSS) and then analyze and interpret its results in order to answer the questions of research and achieve the goals it seeks to achieve.

3. The characteristics of the research community: In order to identify the characteristics of the current research sample, the researcher calculated the repetitions and percentages of personal variables, which is included in the following table:

<table>
<thead>
<tr>
<th>Scientific qualification</th>
<th>% Percentage</th>
<th>Number</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>54.4</td>
<td>37</td>
<td>Bachelor</td>
</tr>
<tr>
<td></td>
<td>39.7</td>
<td>27</td>
<td>High Diploma</td>
</tr>
<tr>
<td></td>
<td>5.9</td>
<td>4</td>
<td>Master</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specialization</th>
<th>% Percentage</th>
<th>Number</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost accounting</td>
<td>4.4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Financial accounting</td>
<td>73.5</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Business management</td>
<td>10.3</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Information systems</td>
<td>4.4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>7.4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job status</th>
<th>% Percentage</th>
<th>Number</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Accountant</td>
<td>10.3</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>
Resolution components:
The research questionnaire included two main sections:
A. Section I: (4) included demographic variables: (scientific qualification, professional specialization, career status, years of experience).
B. Section II: Resolution axes, number (3) axes and include (33) words distributed on the following axes:
   1. The first axis: the theory of restrictions, consists of (5) phrases.
   2. The second axis: internal and external constraints and continuous improvement
      1. The first dimension: internal constraints, consisting of (6) phrases.
      2. Second dimension: external constraints, consisting of (6) phrases.
      3. The third dimension: continuous improvement, consists of (6) phrases.
   3. The Third Axis: Maximizing Profits
      1. The first dimension: maximize profits, consists of (5) phrases.

The researcher designed the response categories on the resolution paragraphs according to the Penta-5 leckert scale, which is (I do not strongly agree =1, I agree = 2, I do not know = 3, I agree =4, I strongly agree =5), and to determine the categories of the responses of the search sample, the scale range of the scale was calculated and the scale range was calculated by the highest response, the following categories of arithmetic averages were reached:

<table>
<thead>
<tr>
<th>Table (2): Computational averages for search resolution scale categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>grade/practice</td>
</tr>
<tr>
<td>Very weak: From 1 To -1.79</td>
</tr>
<tr>
<td>weak: From 1.80 - to 2.59</td>
</tr>
<tr>
<td>Medium: From 2.60 - to 3.39</td>
</tr>
<tr>
<td>Big: From 3.40- to 4.19</td>
</tr>
<tr>
<td>Too big: From 4.20 - to 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table (3): shows the internal consistency of Pearson’s link to search resolution axes and dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The total degree of resolution Axis content</td>
</tr>
<tr>
<td>**0.79</td>
</tr>
<tr>
<td>**0.95</td>
</tr>
<tr>
<td>**0.85</td>
</tr>
<tr>
<td>**0.83</td>
</tr>
<tr>
<td>**0.87</td>
</tr>
<tr>
<td>**0.85</td>
</tr>
</tbody>
</table>

** Link D statistically at a moral level of 0.01

By extrapolating the statistical indicators of Pearson’s correlation coefficients between each axis and the overall degree of resolution in table (3), it is clear that the correlation coefficients of the resolution axes range
from (0.79** to 0.95**) and the dimensions of the resolution axes in the overall degree of the axis. They ranged from (0.83** to 0.87**), all statistically function correlation coefficients at a moral level (0.01) (**), which confirms that the axes and dimensions of the resolution axes are true to what they were set to measure.

**Constitus Indicators α Cronbach:**

This table includes the most important indicators of the stability of search resolution dimensions:

<table>
<thead>
<tr>
<th>α Cronbach</th>
<th>Axis number of phrases</th>
<th>Content</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.78</td>
<td>5</td>
<td>The theory of constraints</td>
<td>1</td>
</tr>
<tr>
<td>0.87</td>
<td>18</td>
<td>Internal and external constraints and continuous improvement</td>
<td>2</td>
</tr>
<tr>
<td>0.79</td>
<td>10</td>
<td>Maximizing profits</td>
<td>3</td>
</tr>
<tr>
<td>0.91</td>
<td>33</td>
<td>Total resolution grade</td>
<td></td>
</tr>
</tbody>
</table>

It is clear from the statistical indicators of table 4 that α Cronbach’s values in the sub-axis and total resolution range range disaggregated by 0.78 to 0.91, all of which are > 0.60, confirming the stability and clarity of the content of the resolution axes in the research sample, where (saved quality is mentioned, 2009, p. 43) Stability is reliable and statistically acceptable if its value is ≥0.60, and based on these indicators of stability, the researcher concludes that the resolution on the scope of its subaxes and its total degree will give the same results if applied in a similar environment in terms of time and space.

**Results of research hypotheses:**

This part of the research includes statistical results from mathematical averages, standard deviations and the relative weight of search dimension selections in order to answer the following search questions:

**Main hypotheses:** There is no statistically significant effect when applying the theory of constraints maximizing the profits of industrial companies? The following hypotheses follow:
1. There is no statistically significant effect of the theory of constraints because it focuses on throughput flow rates, inventory reduction and operating costs reduction to measure the company’s success in achieving its objectives.
2. There is no statistically significant effect on the application of the theory of constraints reducing the time of the production process and reducing production costs in Saudi industrial companies.
3. There is no statistically significant effect when using continuous improvement programs and identifying the bottlenecks imposed on the system in maximizing profits.

**Results of research hypotheses:** To test the research hypotheses, since we have one independent variable (the theory of constraints) and three dependent variables, namely the dimensions of the second axis (internal constraints, external constraints, continuous improvement) as well as the dimensions of the third axis (maximizing profits, theory of constraints under vision 2030), the researcher resorted to the use of the analysis of the simple regression between the independent variable and the dependent variables, according to the following requirements:

- **Moderate distribution of the independent variable and dependent variables**
  To ensure that the distribution was moderate, the researcher came to calculate the twisting coefficient of the independent variable and the dependent variables and the results were as follows:

<table>
<thead>
<tr>
<th>Standard error</th>
<th>Twisting coefficient</th>
<th>Axis content</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.291</td>
<td>0.349</td>
<td>The theory of constraints</td>
</tr>
<tr>
<td>0.497</td>
<td></td>
<td>Internal and external constraints and continuous improvement</td>
</tr>
<tr>
<td>0.207</td>
<td></td>
<td>Maximizing profits</td>
</tr>
</tbody>
</table>

It is clear from the indicators of the twisting coefficient, that all the coefficient of sprains of the research variables < 1, and therefore the researcher concludes that the distribution of data of research variables is not different in distribution from the natural distribution and is therefore considered suitable for conducting a simple regression analysis to test the research hypotheses.

- **Descriptive statistical indicators of research variables**
  This part of the statistical analysis includes descriptive statistics of research variables, such as computational averages, standard deviations, and relative weights to identify the reality of each variable or axis from the perspective of the research sample, and the results are included in the following table:
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The results of the survey show that the number of people who have been forced to leave the country has been reduced to 100,000.

1. First place: The content of the dimension 'Theory of constraints under Vision 2030' comes with a mathematical average of (3.39 out of 5) and a standard deviation (0.81) which is one of the indicators of the fifth average category (4.20 to 5), which confirms the ratio (88%) Of the total search sample, it is very large.

2. Second place: The content of the dimension 'maximize profits' comes with an average account of (4.30 out of 5) and standard deviation (0.78) which is also a fifth average indicator (4.20 to 5), which confirms the ratio (86%) Of the total search sample, it is very large.

3. Third place: The content of the dimension comes with a 'continuous improvement' dimension with an average of 4.25 out of 5 and a standard deviation (0.75) which is also a 5-year average indicator (4.20 to 5), which confirms the ratio (85%) Of the total search sample, it is very large.

4. Fourth place: The content of the dimension 'theory of restrictions' comes with an average arithmetic (4.21 out of 5) and a standard deviation (0.74) which is also a fifth average indicator (4.20 to 5), which confirms the ratio (84%) Of the total search sample, it is very large.

5. Fifth place: The content of the dimension 'internal restrictions' comes with an average arithmetic (4.13 out of 5) and a standard deviation (0.86) which is also a fifth average indicator (4.13 to 4.19), which confirms the ratio (83%) Of the total search sample, it is highly significant.

6. Sixth place: The content of the dimension 'external restrictions' comes with an average arithmetic (4.13 out of 5) and a standard deviation (0.90) which is also a fifth average indicator (4.13 to 4.19), which confirms the ratio (83%) Of the total search sample, it is highly significant.

Results of research hypotheses:

1. Results of the main imposition: which states that 'there is no statistically significant effect when applying the theory of constraints maximizing the profits of industrial companies', and to verify the results of the main imposition, the researcher came to calculate the indicators of the simple regression between the total degree of the independent variable (the theory of restrictions) and the total degree of the dependent variable (maximizing profits) and the results included in the following table:

Table (7): Moral regression model of the impact of the theory of constraints maximizing the profits of industrial companies

<table>
<thead>
<tr>
<th>Significance</th>
<th>T significance</th>
<th>F</th>
<th>R2 impact size</th>
<th>Link R</th>
<th>B</th>
<th>Simple regression indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.002</td>
<td>3.30</td>
<td>0.000</td>
<td>32.41</td>
<td>0.38</td>
<td>0.62</td>
<td>15.92</td>
</tr>
<tr>
<td>0.000</td>
<td>5.69</td>
<td>0.000</td>
<td>0.943</td>
<td></td>
<td></td>
<td>Maximizing profits</td>
</tr>
</tbody>
</table>
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Figure (1): explains

A most track analysis results for the impact of the theory of constraints in maximizing profits. By extrapolating moral indicators, the simple regression model of the effect of the theory of constraints maximizing the profits of industrial companies in Table 7, the research team is clear:

1. The correlation between the theory of constraints and maximizing profits of industrial companies is (0.62**), a statistically functioning correlation value of a direct relationship between the theory of constraints and maximizing the profits of industrial companies.

2. The value of (P = 32.41), which is statistically functioning at a moral level (0.000 < 0.05) on the morality of the impact of the regression model of the independent variable (theory of restrictions) in maximizing the profits of industrial companies, meaning that any shift or development in the applications of the theory of constraints will have a positive impact on maximizing the profits of industrial companies.

3. The effect of the theory of constraints maximizing profits of industrial companies is confirmed by the value (t =5.69), which is statistically a function at a moral level (0.000<0.05), i.e., the effect of the theory of constraints maximizing profits is confirmed by the limits of confidence (99%).

4. The total impact of the theory of constraints maximizing profits in Saudi industrial companies amounts to (R² = 0.38), which means from the researcher’s point of view that the increase or improvement in the level of application of the theory of constraints to one degree in industrial companies, will increase the profits of Saudi industrial companies by (38%).

5. The remaining impact on maximizing profits in Saudi industrial companies, which amounts to (100% - 38% = 62%), is attributed by the researcher to causes and variables outside the current research range.

6. As a result of the main hypothesis, according to the indicators of the results of the simple regression, the researcher concludes that the main hypothesis that ‘there is no statistically significant effect when applying the theory of constraints maximizing the profits of industrial companies, is rejected. The refore, the alternative assumption is that there is a statistically significant effect when applying the theory of constraints maximizing the profits of industrial companies.

Results of sub hypotheses

1. There is no statistically significant effect of the theory of constraints because it focuses on throughput flow rates, inventory reduction and operating costs reduction to measure the company's success in achieving its objectives.

2. There is no statistically significant effect on the application of the theory of constraints reducing the time of the production process and reducing production costs in Saudi industrial companies.

3. There is no statistically significant effect when using continuous improvement programs and identifying the bottlenecks imposed on the system in maximizing profits.

Table (8): shows the total magnitude of the total impact of the theory of constraints maximizing profits in the presence of internal constraints

<table>
<thead>
<tr>
<th>Significance</th>
<th>Value T</th>
<th>Standard error</th>
<th>R²</th>
<th>Regression Dependent variable</th>
<th>Impact direction</th>
<th>Independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>***</td>
<td>3.786</td>
<td>1.871</td>
<td>0.49</td>
<td>0.699</td>
<td>&lt;---</td>
<td>Internal constraints</td>
</tr>
<tr>
<td>**</td>
<td>2.093</td>
<td>0.159</td>
<td>0.11</td>
<td>0.333</td>
<td>&lt;---</td>
<td>Maximizing profits</td>
</tr>
</tbody>
</table>

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Figure (2): shows the results of a most track analysis of the effect of the theory of constraints maximizing profits in the presence of internal constraints.

The results of table (8) figure (2) of the path analysis of the Amos statistical package show the following results:
1. The value of the regression coefficient of the theory of constraints on internal constraints is (0.70), which means that the theory of constraints directly affects internal constraints by (49%).
2. The value of the regression coefficient of internal constraints maximizing profits is (0.33) which means that internal constraints affect by (11%) in maximizing profits.
3. The value of (t) which is equal to (3.786) is statistically significant at a moral level (0.000) (***). following the theory of constraints on internal restrictions.
4. The value of (t) the effect of internal constraints maximizing profits amounted to (2.893) and is statistically indicative at a moral level (0.004) (**) on the impact of internal constraints maximizing profits.

Table (9): shows the indirect effect of the theory of constraints maximizing profits in the presence of internal constraints.

<table>
<thead>
<tr>
<th>The impact of the</th>
<th>Theory of constraints</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.060</td>
<td>Internal constraints</td>
<td></td>
</tr>
<tr>
<td>0.233</td>
<td>Maximizing profits</td>
<td></td>
</tr>
</tbody>
</table>

With regard to the indirect effect of the theory of constraints maximizing profits of industrial companies, the results of table (9) show that the total impact of the theory of constraints maximizing profits in the presence of internal constraints is (23.3%), which means that the theory of constraints is more influential in maximizing corporate profits in the presence of internal constraints.

Table (10): shows the total magnitude of the total impact of the theory of constraints maximizing profits in the presence of external constraints.

<table>
<thead>
<tr>
<th>The significance</th>
<th>Value T</th>
<th>Standard error</th>
<th>R2</th>
<th>Regression</th>
<th>Dependent variable</th>
<th>Impact direction</th>
<th>Independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>**</td>
<td>3.268</td>
<td>3.207</td>
<td>0.68</td>
<td>0.89</td>
<td>External restrictions</td>
<td>&lt;---</td>
<td>The theory of constraints</td>
</tr>
<tr>
<td>***</td>
<td>0.766</td>
<td>0.110</td>
<td>0.53</td>
<td>0.73</td>
<td>Maximizing profits</td>
<td>&lt;---</td>
<td>External restrictions</td>
</tr>
</tbody>
</table>
The effect of applying the theory of constraints in maximizing corporate profits... Elnour et.al.

The results of table (10) and figure 3 of the Amos statistical package's track analysis show the following results:
1. The value of the regression coefficient of the theory of constraints on external constraints is (0.83), which means that the theory of constraints directly affects external constraints by (68%).
2. The value of the regression coefficient for external constraints on maximizing profits is (0.73) which means that external constraints affect (53%) in maximizing profits.
3. The value of (t) which is equal to (3.268) is statistically functioning at a moral level (0.001) (**) following the theory of constraints external constraints.
4. Similarly, the value of (t) of the effect of external constraints maximizing profits amounted to (8.766) and is statistically a function at a moral level (0.000) (***) on the effect of external constraints maximizing profits.

Table (11): shows the indirect effect of the theory of constraints maximizing profits in the presence of external constraints

<table>
<thead>
<tr>
<th>The theory of constraints</th>
<th>Variable</th>
<th>Impact direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>External restrictions</td>
<td></td>
</tr>
<tr>
<td>0.603</td>
<td>Maximizing profits</td>
<td></td>
</tr>
</tbody>
</table>

With regard to the indirect impact of the theory of constraints maximizing profits of industrial companies in the presence of external constraints, it is clear from the results of the table (11), that the total impact of the theory of constraints maximizing profits in the presence of external constraints is (60.3%), which means that the theory of constraints is more influential in maximizing corporate profits in the presence of external restrictions.

Table (12): shows the total magnitude of the total impact of the theory of constraints in maximizing profits in the presence of continuous improvement

<table>
<thead>
<tr>
<th>The significance</th>
<th>Value T</th>
<th>Standard error</th>
<th>R2</th>
<th>Regression</th>
<th>Dependent variable</th>
<th>Impact direction</th>
<th>Independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>***</td>
<td>4.956</td>
<td>1.315</td>
<td>0.83</td>
<td>0.91</td>
<td>Continuous improvement &lt;--- The theory of constraints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>***</td>
<td>7.449</td>
<td>0.154</td>
<td>0.45</td>
<td>0.67</td>
<td>Maximizing profits &lt;--- Continuous Improvement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure (4): shows the results of Amos track analysis of the effect of the theory of constraints in maximizing profits in the presence of continuous improvement

The results of table (12) and figure 4 of the Amos statistical package's track analysis show the following results:
1. The value of the regression coefficient of the theory of constraints on continuous improvement is (0.91), which means that the theory of constraints directly affects continuous improvement by (83%).
2. The value of the regression coefficient is continuous improvement on maximizing profits (0.67) which means that continuous improvement affects (45%) in maximizing profits.
3. The value of (t) which is equal to (4.956) is statistically significant at a moral level (0.000) (*** ) following the theory of constraints in continuous improvement.
4. Similarly, the value of (t) for the effect of continuous improvement in maximizing profits amounted to (7.449) and is statistically a function at a moral level (0.000) (*** ) following continuous improvement in maximizing profits.
The effect of applying the theory of constraints in maximizing corporate profits

...Elnour et al.

Table (13): shows the indirect effect of the theory of constraints maximizing profits in the presence of continuous improvement

<table>
<thead>
<tr>
<th>Theory of constraints</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>Continuous improvement</td>
</tr>
<tr>
<td>0.612</td>
<td>Maximizing profits</td>
</tr>
</tbody>
</table>

With regard to the indirect impact of the theory of constraints maximizing profits of industrial companies in the presence of continuous improvement, it is clear from the results of the table (13), that the total impact of the theory of constraints maximizing profits in the presence of continuous improvement is (61.2%), which means that the theory of constraints more influential in maximizing corporate profits in the presence of external constraints.

Table (14): shows the total magnitude of the total impact of the theory of constraints maximizing profits under internal and external constraints and continuous improvement as a whole

<table>
<thead>
<tr>
<th>The significance</th>
<th>Value T</th>
<th>Standard error</th>
<th>R2</th>
<th>Regression</th>
<th>Dependent variable</th>
<th>Impact direction</th>
<th>Independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>***</td>
<td>4.558</td>
<td>4.604</td>
<td>0.77</td>
<td>0.87</td>
<td>Internal and external constraints and continuous improvement as a whole</td>
<td>&lt;---</td>
<td>The theory of constraints</td>
</tr>
<tr>
<td>***</td>
<td>7.521</td>
<td>0.051</td>
<td>0.46</td>
<td>0.68</td>
<td>Maximizing profits</td>
<td>&lt;---</td>
<td>constraints Internal and external and continuous improvement as a whole</td>
</tr>
</tbody>
</table>

Figure (5): shows the results of Amos track analysis of the effect of the theory of constraints in maximizing profits under internal and external constraints and continuous improvement as a whole

The results of table (14) and figure [5] of the Amos statistical package's track analysis show the following results:

1. The value of the regression coefficient of the theory of total degree constraints is (0.87), which means that the theory of constraints directly affects internal and external constraints and continuous improvement as a whole by (77%).
2. The value of the regression coefficient for internal and external constraints and the continuous improvement in maximizing profits is (0.68) which means that internal and external constraints and continuous improvement as a whole affect (46%) in maximizing profits.
3. The value of (t) which is equal to (4.558) is statistically significant at a moral level (0.000) (***), following the theory of constraints internal and external constraints and continuous improvement as a whole.
4. Similarly, the value of (t) of the impact of internal and external constraints and continuous improvement as a whole in maximizing profits amounted to (7.521) and is statistically indicative of a moral level (0.000) (***), on the impact of internal and external constraints and continuous improvement as a whole in maximizing profits.

Table (15): shows the indirect effect of the theory of constraints maximizing profits in the presence of internal and external constraints and continuous improvement as a whole

<table>
<thead>
<tr>
<th>The theory of constraints</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>Internal and external and continuous improvement as a whole</td>
</tr>
<tr>
<td>0.592</td>
<td>Maximizing profits</td>
</tr>
</tbody>
</table>
With regard to the indirect impact of the theory of constraints maximizing the profits of industrial companies in the presence of internal and external constraints and continuous improvement as a whole, it is clear from the results of the table (14), that the total impact of the theory of constraints on maximizing profits in the presence of continuous improvement is (59.2%), which means that the theory of constraints is more influential in maximizing corporate profits in the presence of external constraints.

10. Results and Recommendations

First: The Results:

By researching The Effect of Applying the Theory of Constraints in Maximizing Corporate Profits in Industrial Companies Application on Saudi Private Sector in Accordance with Vision 2030, and comparing the results with research done in related topics, the results were as follows:

- Applying the theory of constraints helps Saudi industrial companies to maximize their profits.
- Whenever there is efficient and effective use of resources that are restricted or controlled by the production flow and in the overall production process, this gives the greatest margin of achievement.
- Improvement or increase in the level of improvement by applying the theory of constraints leads to maximizing the return of profits.
- There is a great impact of the internal and external constraints of Saudi industrial companies in maximizing profits.
- According to Vision 2030, Saudi Arabia’s strategy supports industrial companies to build a competitive and sustainable system that promises to save the national economy and Saudi citizens.

Second: The Recommendations:

- Training and teaching workers and raising the degree of career and technological proficiency.
- Identify failures before they occur and try to address them to reduce the costs of damaged production and thus maximize profits.
- Using the management of Saudi industrial companies for different statistical methods as statistical quality control to monitor the progress of the process in terms of quality and cost.
- Focus on continuous improvement processes in order to minimize or eliminate the impact of constraints and thereby improve performance.
- Attention to addressing market constraints and raising the company’s competitiveness and market position

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References:

8. Hussein, Abdul Mohsen Mohammed (2008), proposed entry to develop the effectiveness of cost management systems in the field of resource rationalization decisions. unpublished master’s studies, Faculty of Commerce- University of Sohag.


12. Shawky, Fouda (2003). The concept of the value chain as a tool to build an integrated framework between the theory of constraints and the cost of the product lifecycle to maximize profits in industrial companies’ study theory and applied the Egyptian. Journal of Business Studies Faculty of Business University Mansoura, (3)
